

CLAIMS:

- 5 1. A method of utilizing a communications apparatus designed for use with one or more cellular telephone networks, the method comprising:
Converting an address utilized by said cellular telephone network to an address utilized by a data network;
Transmitting, from a data network to a cellular network, information indicative of the cellular phone being communicatively coupled to said data network; and
10 Forwarding in response to said step of transmitting, calls directed to said cellular telephone from said cellular network to said data network.
- 15 2. The method of claim 1 wherein said converting occurs in a server connected to an IP network.
3. The method of claim 1 wherein said step of transmitting occurs using an out of band signaling network.
- 20 4. The method of claim 3 wherein said out of band signaling network in an SS7 or C7 telephone network.
5. The method of claim 1 wherein said step of transmitting occurs using the Internet.
- 25 6. The method of claim 1 wherein said transmitting also includes transmitting to said cellular telephone network information indicating that said network to which said cell phone is communicatively coupled is not a cellular network.
- 30 7. The method of claim 6 wherein said information also includes information indicating that said network to which said cellular telephone is communicatively coupled is an IP network.

- 5 8. A wireless apparatus capable of communicating directly with one of plural networks, said device comprising a processor for detecting a network interface and for automatically configuring said apparatus to communicate using either a packet switched data network or a cellular telephone network, depending upon which of plural types of networks are detected or which has higher priority using criteria selected by a user.
- 10 9. The wireless device of claim 8 wherein one of said plural types of networks is an IP network and wherein said apparatus interfaces to said IP network using a WiFi network.
- 15 10. The wireless device of claim 9 wherein said automatically configuring is accomplished in a prioritized order.
- 20 11. The wireless device of claim 10 wherein said prioritized order is programmable by a user.
- 25 12. A cellular telephony network comprising a switch/server for receiving signals from an IP network indicating that a cellular phone is roaming from its home network to the IP network, and means responsive to said signals indicating for configuring said wireless cellular telephony network to forward an incoming call directed to said roaming cellular telephone to said IP network.
- 30 13. A system including the cellular network of claim 12, connected to an IP server, said IP server including conversion data for converting an incoming telephone number into an IP address for completing said incoming call.
14. The system of claim 13 wherein said IP address is that of an adapter to which the cellular phone is connected or of the cellular phone, and wherein an access point completes the incoming call over a local area network (LAN) to said roaming cellular telephone or an adapter connected thereto.

15. The system of claim 14 wherein said LAN is either an Ethernet or a WiFi network.
- 5 16. The system of claim 14 wherein said roaming cellular telephone is inserted into an adapter, and wherein said adapter operates to change a protocol utilized by said roaming cellular telephone from that of a cellular telephone to that of a data networking device.
- 10 17. The system of claim 13 wherein the signals indicating roaming are transmitted out of band and wherein a media channel opened for conveyance of the incoming call is implemented in band.
- 15 18. A device for use in a cellular network comprising means for completing an incoming call to a wireless cell phone via the cellular network if the cell phone is not roaming and means for forwarding the incoming call to a packet switched data network if the cell phone is roaming to an area covered by an IP network.
19. The device of claim 18 wherein the packet switched data network is the Internet.
- 20 20. The device of claim 18 further including a switch/server to receive signals indicating whether the cell phone is roaming.
21. The device of claim 20 wherein the signals are received from the Internet.
- 25 22. The device of claim 20 wherein the signals are received using out of band signaling.
- 30 23. A method of communicating between two data devices, at least one of said data devices being a wireless device configured to be connected in a wireless manner to a packet switching network, the method comprising converting an IP address associated with said wireless device to a telephone number, transmitting the

telephone number over a telephony network to an IP server connected to a data network, and, in response to said step of transmitting, forwarding packet switched data destined for said wireless device to said wireless device through said telephone network using the telephone number.

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24. The method of claim 23 further comprising implementing a prestored priority protocol to determine the highest priority network available for use, and utilizing such highest priority network.

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25. The method of claim 23 wherein at least one of said data devices is communicatively coupled to a WiFi network.

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26. An adapter comprising an IP interface having an IP address, a telephone interface for connecting to a phone having a telephone number, and software for forwarding incoming data from an IP network to said telephone by converting said incoming IP signals to telephony signals such that said telephone receives an incoming telephone call.

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27. The adaptor of claim 26 wherein said adapter is integrated within said telephone.

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28. A communications network comprising a telephony network and a packet switching data network, a plurality of wireless data devices, a plurality of cell phones, a plurality of switches, and a plurality of servers, the communications network further comprising computers for determining if a cell phone or wireless data device is roaming, said wireless data devices and said cell phones being configurable to communicatively couple to said communications network using either the telephony network or the packet switching data network, depending at least upon whether said wireless devices or said cell phones are roaming, and to where said wireless devices and cell phones are roaming.

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29. The communications network of claim 28 wherein if said computers determine that a cell phone or wireless data device is roaming, a home network associated with said device is signaled such that incoming calls and/or data sessions may be forwarded to a roaming network.
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30. The communications network of claim 29 wherein the computers are implemented on the same hardware as the servers or switches.
31. The communications network of claim 29 wherein the home network is signaled via out of band signaling.
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32. The communications network of claim 29 wherein said home network is signaled via a packet switched data network.
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33. The communications network of claim 29 wherein at least some of the wireless data devices and the cell phones are configured to implement a prioritization system that causes communicative coupling between the communications network and the highest priority available network to couple thereto.
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34. A first computer for directing a first server to send a telephone call to an access point over a data network, the computer comprising instructions to determine to which access point the call should be sent, communications means for transmitting an address of said access point for use by said first gateway, and an interface to instruct a switch/server to send the telephone call to the first gateway.
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35. The first computer of claim 34 wherein said first computer includes functionality to act as a gatekeeper.
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36. The first computer of claim 1 further comprising software to receive and process a signal from a network, which signal indicates that said cell phone has roamed onto an area within a purview of said data network.

37. The first computer of claim 36 further comprising instructions to determine a network access point from said signal received.

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38. A system comprising a switch/server for interfacing to a cellular network, said switch/server comprising a first interface to receive from a first server information indicative of a cell phone associated with the cellular network having roamed onto a data network, and a second server connected to the data network, the switch server being configurable to forward calls arriving at the cellular network and destined for said cell phone to said second server.

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39. The system of claim 38 wherein the switch server is so configured upon receipt of a message from said first server identifying said second server as a server to which said calls should be forwarded.

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40. The system of claim 38 wherein said second server contacts said first server upon receipt of said forwarded call.

41. The system of claim 40 wherein said first server sends said second server information to forward said call to said cell phone.

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42. The system of claim 41 wherein said first and second servers are one and the same.

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43. A wireless device or cell phone comprising plural interfaces for interfacing to at least a cellular network or a data network, the wireless device including software for implementing a priority system that detects the presence of at least a cellular network and at least a data network, and communicatively couples the wireless device to a network having a highest priority.

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44. The wireless device of claim 43, said wireless device being a cell phone.
45. A system including the wireless device of claim 43 communicatively coupled to a data network, said data network including a server, said server being configured to send out of band telephony signaling to a telephony network in response to a signal from said wireless device.
46. The system of claim 45 wherein said out of band telephony signaling is SS7 signaling.
47. The system of claim 46 wherein said SS7 signaling implements a transmission of an instant message.
48. The system of claim 46 wherein said SS7 signaling is utilized to advise a switch/server associated with a home cellular network that a cell phone associated with said home cellular network has roamed to an IP network.
49. A method of routing cellular telephone calls over an IP network, the method comprising: detecting, at the IP network, a cell phone associated with the cellular network; transmitting to the cellular network a message indicating that said cell phone is now communicatively coupled to said IP network; and receiving calls at the IP network that have been forwarded from the cellular network and which are destined for the IP cell phone.
50. The method of claim 49 wherein said detecting occurs when said cell phone is located in a prescribed area.
51. The method of claim 50 further comprising informing a home network associated with said cell phone to forward calls destined for said phone to the IP network.

52. The method of claim 51 wherein said informing is accomplished using out of band signaling.
53. A server for use in routing calls from a first cell phone having a first home network to a second phone, said server comprising a processor for accepting a call from said first cell phone destined for said second phone, routing said call over an IP network to which said server is connected if said second phone is within a purview of said IP network, and routing said call to said first home network for further routing if said second phone is not within a purview of said IP network.
54. The server of claim 53 wherein billing or authentication information is routed to said first home network regardless of whether said second cell phone is within said purview or not.
55. The server of claim 54 wherein said billing or authentication information is routed to said home network using out of band signaling.
56. A system comprising an IP phone and a cellular network, said IP phone including, or being connected to an adapter that includes, a processor for converting IP protocol packets conveyed to and from said IP phone to data suitable for receipt and processing by a cellular network, said cellular network being communicatively coupled to a home IP network associated with said IP phone.
57. The system of claim 56 wherein said cellular network communicates billing or authentication information back to the home IP network.
58. The system of claim 57 further including a server connected to said IP network to forward IP calls destined for said IP phone from said home IP network to said cellular network.

59. The system of claim 58 wherein said server and said cellular network communicate via an out of band telephony protocol.
- 5 60. The system of claim 13 further comprising conversion means for converting media information in the cellular network to IP format to facilitate communications with said IP network.
- 10 61. The system of claim 13 wherein said IP address is that of an access point on said IP network.
62. The system of claim 13 wherein the IP address is that of an intermediate router.
- 15 63. A storage medium having stored thereon instructions that, when executed by a computer, cause said computer or another computer to instruct a cellular telephone network to forward calls to a server on an IP network, and also cause said computer or another computer to instruct said server to where to route said call on said IP network.
- 20 64. The storage medium of claim 63 wherein said instructions cause said computer or another computer to instruct said server to where to route said call on said IP network after said call is routed to said server on said IP network.
- 25 65. The storage medium of claim 66 wherein said instructions also cause said computer or another computer to accept outgoing calls from a cell phone over a data network and forward such outgoing calls to a cellular network.
- 30 66. An adapter for a wireless device comprising a Personal Computer (PC), said PC being connected to a data network and being arranged to receive voice and data over said data network, and to distinguish between the two, said PC also including software and hardware to, upon recognition that arriving information is associated

with voice, forward said arriving information over a wireless connection to a handheld wireless device.

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67. The adapter of claim 66 wherein said handheld wireless device is a cordless phone.

68. The adapter of claim 66 wherein said handheld wireless device is a cell phone.

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69. An adapter for use with a cellular phone comprising a protocol translator for translating between a cellular network protocol utilized by a cellular network and a PSTN protocol such that a cell phone inserted into said adapter can operate directly over the PSTN.

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70. The adapter of claim 69 further comprising an additional protocol translator for translating between a protocol utilized by a cellular network and a protocol utilized by an IP network.

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71. The adapter of claim 70 further comprising software for automatically selecting between plural network interfaces.

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